

Pasture and Fodder Crop Seeds

FOR AUTUMN PLANTING, 1936

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INTRODUCTION

AUTUMN is sowing time for the choicest of our pasture grasses and clovers in most districts. The provision of succulent green feed for winter and early spring use is largely dependent on suitable sowings of fodder crops during the next few months.

Yates' Farm Seeds are the most economical to use. They are produced with the greatest care given to trueness of type and heavy-yielding qualities. The thorough machine dressings eliminate light seeds, weed seeds, and rubbish, and all seeds are strictly tested for vitality. Less seed need be sown per acre when the grade is "Yates' Machine Dressed and Specially Selected."

Farmers are now seeking increased yields with a minimum of cost. Write for our Complete Current Price List free on application. These Lists are published at intervals of about three to five weeks. Be sure you have the latest copy.



Harvesting Special Certified Perennial Rye Grass.

WIMMERA RYE GRASS (*Lolium Rigidum* var. *Strictum*)

AN annual heavy seeding species of the Rye Grass family, which is exceedingly hardy and drought-resistant, and is proving of the utmost value to Australian graziers. It is readily eaten by all classes of stock, and adapts itself to varying climatic conditions. As the seed germinates freely and rapidly when sown in the autumn, Wimmera Rye Grass is easily established and will re-seed each year. It thickens up from season to season, provided the soil is loose enough for the seed to obtain a little cover. In very hard soils it is better to harrow in the late summer. Like all Rye Grasses, Wimmera will only give its best in fertile soils. It may be introduced into existing pastures by scattering on the surface and following with an old cultivator or heavy harrows.

On the slopes and highlands it is advisable to mix a little Subterranean Clover with the Wimmera Rye Grass when sowing in this way. About 4-6 lbs. Wimmera Rye Grass and 2 lbs. Subterranean Clover per acre is sufficient. Further West, where the rainfall is not sufficient to ensure the success of Subterranean Clover, Lucerne is used with great success in combination with Wimmera Rye Grass. To establish the Lucerne, however, the land must be ploughed and properly prepared. Sow about 2-3 lbs. Wimmera Rye Grass with about 2 lbs. Lucerne per acre. This mixture makes a great all-the-year-round pasture when properly managed.

It is advisable to include from 1-3 lbs. of Wimmera Rye Grass in all permanent pasture mixtures for sowing on hilly country in districts of good rainfall, because its heavy seeding habit and the quick seasonable germination of the seeds ensure a continuance of good winter grass should an extra severe summer drought thin out the perennial grasses.

To the sheep and wheat farmer, Wimmera Rye Grass is of special value, owing to the fact that when harmful grass seeds are plentiful, farmers with areas of Wimmera Rye Grass have clean paddocks in which to turn lambing ewes, and so are able to market lambs free from Spear and Barley grass seeds. In many localities lambs have to be marketed before they are at their best in order to escape grass seed; but the seed of Wimmera Rye Grass has no detrimental features, and does not damage the wool or eyes of sheep. It will provide green feed for seven to eight months in the colder parts of the year, after which, although it dries off, it is very nutritious as dry hay, the seeds remaining attached to the dry straw for a long period.

A special feature of Wimmera Rye (when dry) is the fact that the plants retain their seed well, the long outer glume holding the seed firmly against the seed stem. Sheep readily eat these dry seed stems, and thus obtain a certain amount of grain with their roughage.

In the hands of a careless farmer, Wimmera Rye Grass may give trouble in wheat areas; if the seed is plentiful in land sown with wheat the grass may check the growth of the crop considerably. When the area is required for cultivation, the grass can be prevented from seeding and eradicated by very heavily stocking the paddock with sheep throughout the spring. Any plants which grow on the subsequent fallow can be controlled by feeding them off and working the fallow. A cultivator with broad tines, such as a duck-foot, should be used when the seedlings are just showing through the ground, and at frequent intervals later if required.

The seed should be sown in March or April to obtain the best results, but the planting period may be extended to May or even June if it is necessary to wait for favourable conditions.

It must be remembered that although this grass persists for many years on account of the free seeding habit, it will soon be eaten out if rabbits are plentiful, or if it is overstocked at seeding time.

IDENTIFYING WIMMERA RYE SEED.

It is practically impossible to identify seed of Wimmera Rye Grass in comparison with that of the well-known Italian and Perennial Rye Grasses, which are, of course, of no use in hot, dry districts, where Wimmera is so successful. Much of the seed of Wimmera Rye Grass on the market contains an admixture of the seeds of Hexham Scent, so dreaded by dairy and wheat farmers on account of the taint; therefore, we strongly urge farmers to buy machine-dressed samples from a reputable and reliable seed house who have the complete and efficient and up-to-date plant for cleaning this class of seed, and not risk being disappointed with inferior seed.

PERENNIAL RYE GRASS (*Lolium Perenne*)

The king of permanent grasses, Perennial Rye Grass will only establish itself in districts where a good winter and fair summer rainfall is experienced. It demands high soil fertility, and proves most permanent in rich soils containing a fair admixture of clay. It does not thrive so well on loose soils which are liable to dry out. By selecting the most permanent types, such as Yates' Government Certified Perennial Rye Grass, the slightly higher price should be well repaid by the long-lasting sward obtained. In our experience the

higher grade Perennial Rye Grasses stand hot, dry summer conditions remarkably well, whereas the lower grade types have often proved disappointing in this respect. Sowings of genuine certified seed are well worth trying in country where previous sowings of Perennial Rye Grass have proved failures.

Many areas previously considered unsuitable for Perennial Rye Grass have been so enriched by dressings of superphosphate and by the introduction of Subterranean Clover that they will now carry a good sward of the best type of Perennial Rye Grass if over-sown in the autumn and the seed well harrowed in. In sowing to provide winter feed in renovated Paspalum paddocks, a fair proportion of Perennial Rye Grass should be included in the mixture, and we strongly urge the use of our Certified strain.

Yates' Special A.Y. New Zealand Government Certified Perennial Rye Grass is absolutely superior in every respect as regards permanency and dense swarding type. The price is necessarily higher, because paddocks of this class of Perennial Rye Grass are not so free seeding as the less permanent strains. It is the less permanent types which seed most freely. The seed is of high vitality and heavy weight.

We stock the very highest grade of New Zealand Government Certified Perennial Rye Grass in both "Mother seed" and "Permanent Pasture" grades. For those desiring to lay down an area for seed sowing, we recommend the "Mother seed." For sowing down the best type of pasture for grazing purposes the "Permanent Pasture" is thoroughly satisfactory. In all respects.

Permanent Pasture Certified Perennial Rye Grass is now so reasonably priced that almost all buyers use it, and the slightly cheaper uncertified Re-machined Perennial Rye Grass is not being used to anything like the extent of a few years ago.

Our clients should bear in mind that the quicker-growing, less-permanent forms of Rye Grass still have some place in the farm curriculum. They are quicker growing and more palatable to stock, and therefore for temporary pastures they are perhaps preferable. The Italian Rye Grass (a biennial type) is mostly used for this purpose, and a little is usually included in mixtures to give an early pick.

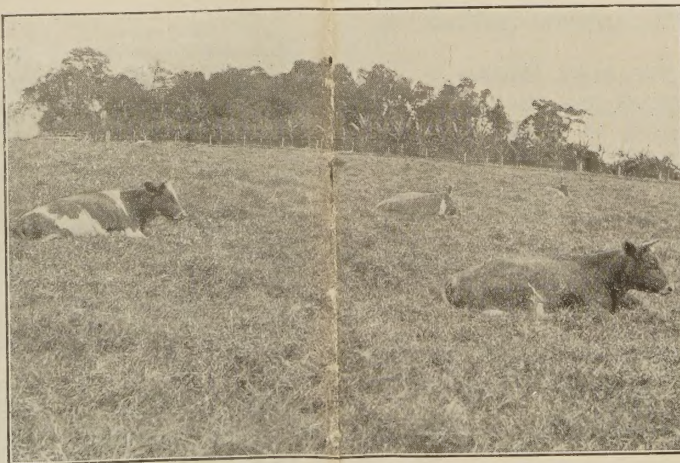
ITALIAN RYE GRASS. (*Lolium Italicum*)

Italian Rye Grass is a biennial under favourable conditions. It is probably the quickest and most luxuriant growing of all the winter grasses when sown on well-prepared land. We recommend that a little Italian Rye Grass be included in all grass mixtures sown in districts of good rainfall. Acting as a "nurse" crop for the slower developing perennial grasses in the mixed sowing, Italian Rye Grass also gives a quick bite to stock which are thus encouraged to tramp quickly over the newly sown area. This unhurried "hoof cultivation" is just what is required to compact the soil and strengthen the root systems of the developing perennial grasses.

As a "Temporary Pasture" grass, Italian Rye Grass is superb. 15-17 lbs. of this grass with 3-5 lbs. of Perennial Red Clover per acre give about the quickest-growing pasturage of all grasses and clovers. There is no sweeter grazing for stock during the cooler months of the year and no better "Meadow Hay" is produced when cut in the late spring. Or a mixture of Perennial Red and Berseem Clover.

A "Temporary Pasture" of this type will last for upwards of two years or more (if well managed), giving a wonderful return over the period of its most vigorous growth. For spelling cultivation land which may be subsequently brought back into cropping without fear of the grass and clover persisting when ploughed under, there is really nothing better than this mixture. The best time to sow is in the autumn. Fertile soil conditions are essential.

On rich lands in good rainfall areas Italian Rye Grass is deserving of more notice than it has hitherto received as an alternative crop to Oats for winter and spring grazing. Its very quick, upright, succulent, leafy growth, palatability, and ability to stand very heavy stocking, give it a great value in



A luxuriant pasture on the North Coast, consisting of specially sown Grasses and Clovers.

TERMS OF BUSINESS Conditions of Sale and Non-Warranty

We believe that all Seeds Bulbs and Roots sold by us are of the description and kind specified by us at the time of sale but owing to the practical impossibility in many cases of being certain of this we give no undertaking that such Seeds Bulbs or Roots will correspond with the description under which they are sold and we make all sales subject to this condition. We further give no warranty expressed or implied as to their growth description quality or productiveness and will not be in any way responsible for the crop. If the purchaser does not accept the goods sold to him on these terms they are at once to be returned to us and any money paid to us will be refunded.

ARTHUR YATES & CO. LTD.

PRICES.—We do not print prices in this Descriptive List, as values fluctuate, and some of our supplies have not been received into store at time of going to press. All charges are set out in our Price List of Farm Seeds current at time of booking order. The Price List now current is sent you herewith, and later issues will be posted promptly on receipt of enquiry.

DELIVERY.—We deliver Seeds on rail or wharf, Sydney, after which Seeds are on customer's account and at his risk. Orders sent by goods train are consigned carriage forward (except to unattended platforms), unless we are otherwise instructed at time of order. Delivery within the Suburban area of Sydney will be made of Farm Seeds, Seed Potatoes, Manures, and Garden Sundries, at the following rates:—Up to 14 lbs., 6d.; up to 28 lbs., 9d.; up to 1 cwt., 1/-; between one and two cwt., 2/-.

FORWARDING INSTRUCTIONS.—Please give full and careful directions with each order and we will do our utmost to comply with them. When no instructions are received we send according to our judgment.

TERMS OF PAYMENT.—Our terms are nett cash with order (including allowance for freight if goods are required by coastal steamer or passenger train, or by goods train to unattended platforms).



Natural Pastures in the St. Marys district being improved with Subterranean Clover (inset).

this respect. As a smothering crop to clean up cultivation land a heavy sowing gives good results.

Sow to one bushel (20 lbs.) per acre for this purpose. Or if including Clover or Purple Vetch reduce quantity a little. It also does well with Rape. When sown in mixture with other grasses, a much smaller quantity is used, according to circumstances.

Yates' Extra Heavy Re-machined Italian.—This is a first-class strain, thoroughly re-cleaned, and has given excellent results wherever grown.

PHALARIS TUBEROSA (*Bulbosa*)

Phalaris tuberosa is exactly the same as what was previously known as Phalaris bulbosa. Claims are sometimes made for other strains slightly varying from the standard, but they are really not fixed, and certainly not available as seed in any quantities. The main thing with Phalaris is to secure the real deep-rooted perennial strain. As the seed can only be identified by experts, and even then with difficulty, purchasers, in their own interests, are urged to be most careful of the source and origin of any seed they procure. Large quantities of that almost useless annual, Phalaris minor, have been sold by unscrupulous and inexperienced people as the true strain. A reliable seed house for supplies is the best protection against loss and disappointment. We are usually able to offer seed certified by the New South Wales Government, and this is saved from areas which have been laid down for many years and proved permanent, vigorous and drought resistant.

When once properly established Phalaris tuberosa is one of the hardiest and longest lived perennial grasses known for our cooler districts, which are almost all endowed with sufficient rainfall to ensure a successful stand. Its main period of growth is during the cooler part of the year, and probably no grass will show better growth during extremely cold and frosty weather. The grass also responds well to showers in the summer months. Even under the temporarily water-logged conditions when excessive winter rains occur, this grass shows a truly remarkable resistance to rust.

The roots of Phalaris tuberosa have been traced six feet and more into the subsoil. The roots are of a tuberous nature and can retain moisture and plant food over lengthy periods, giving the top growth a quick start as soon as weather conditions are favourable. Runners just under the surface of the ground are freely produced, and the sward quickly thickens up in this way.

The feeding value is very high, and a sward of this grass mixed with a suitable proportion of clovers will carry a heavy stocking all the year round. Provided a good regular winter rainfall is experienced, we have known Phalaris tuberosa to stand long hot dry summers in districts of a 24-inch rainfall and less.

Sometimes difficulty is experienced in establishing Phalaris tuberosa in mixtures with other blade grasses. For the first year it is somewhat delicate and dislikes the competition of weeds and surface-rooting grasses, which tend to starve the slowly developing deep but sparse root system of the young Phalaris. To quickly establish a plot it is best to sow this grass with Clovers or Lucerne only. It is, however, well worth

while including a small quantity in grass seed mixtures. Even if only a few established plants result, they tend to thicken out with their strong under-ground runners. Sow about 3-5 lbs. per acre with 2 lbs. of White Clover, Subterranean Clover, Perennial Red Clover, English Trefoil or Lucerne, according to soil and climate. Add $\frac{1}{2}$ to 1 lb. of Phalaris tuberosa to grass seed mixtures. As a rule autumn is the best time to sow, but in very cold districts spring sowing gives good results.

A shy seeder, supplies are always limited of reliable Phalaris tuberosa, and the price is necessarily high compared to other grasses. It must be remembered, however, that much less seed is sown per acre to provide a good stand, and the sward will be quite permanent in a suitable climate if cared for and managed.

COCKSFOOT (*Dactylis Glomerata*)

Yates' A. Y. Certified Akaroa—New Zealand grown, and of the best permanent perennial type. Much imported European Cocksfoot seed has caused dissatisfaction by dying out after a season or two of Australian climate. The above strain, however, is very superior in its strong persisting habit.

It should be included in all grass mixtures sown in the Coastal and Tableland districts of New South Wales, and in other parts of the Commonwealth with fair average rainfall evenly distributed throughout the year. Especially suitable for second-class soils, hilly country and areas of hot, open red soils, where the Perennial Rye Grass is difficult to establish. On rich soils it is inclined to grow tussocky, but judicious grazing will counteract this to a certain extent. Cocksfoot of the best Akaroa strain has a remarkably long period of growth. It retains its vigour well into the hot weather. Two to 4 lbs. per acre should be included in grass mixtures, or if sown alone 15-20 lbs. per acre with a little Clover added.

Our seed is heavy and thoroughly machine-cleaned, and is tested to give a good germination and a quick and even catch.

For those specially requiring, we usually stock a little of the cheaper imported Danish Cocksfoot seed in a very nice sample, but, although this strain shows great vigour for the first year, the crowns quickly die out and allow weeds to take their place in the pasture.

Sow Cocksfoot mainly in the autumn, but spring is also a good time in many districts. Include a little Perennial Red, White and Subterranean Clover, and in deep soils, Lucerne, as well as other grass varieties.

PRAIRIE GRASS (*Bromus Unioides*)

For rich loamy land, with a good rainfall, this is a most valuable grass, particularly for the dairyman. It gives a wonderful growth of succulent palatable fodder. It is essential that common Prairie Grass be not constantly grazed, as this will kill it out. When a fair growth has been made,

WHEN TO SOW

The autumn and early winter months are the best for sowing most of the grasses here described. This gives them an opportunity of establishing their roots during the cooler periods of the year, when these grasses show most vigour in their growth. Those few varieties, such as Paspalum, Rhodes, Couch, etc., which are particularly vigorous in the hottest months, may be sown in the late spring.

These remarks apply to all the Clovers and Legumes, except those which will not stand frost. These latter should be sown to miss all danger of frosts.

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YATES' FODDER AND GRASS SEEDS FOR

it should be stocked heavily, and when fed down spell again until a good new growth has been made. By having paddocks well sub-divided, this system of grazing can be carried out. It will prove for grazing almost as valuable as a crop of oats, with the advantage that it will last for several years without re-sowing. On soils liable to be tramped very hard and which remain in this set condition, it will not respond to this treatment so well. To maintain a good covering, it should be allowed to seed itself down at the end of each growing season. It is a good plan to use a little in pasture mixtures to give a good body of feed while the Perennial Grasses are establishing themselves. If sown with Lucerne on good land the combination will give wonderful grazing if spelled regularly after being closely grazed. The Prairie Grass gives good results when Lucerne is dormant.

Sow 20 to 40 lbs. per acre if used alone. When used in mixtures, use one to three pounds per acre.

Yates' Finest Bright Re-machined.—A heavy grade plump seed of a very high percentage of germination and purity.

PERENNIAL PRAIRIE GRASS

(*Bromus marginatus*)

The Agrostologist Department of New South Wales originally introduced this variety. We fortunately secured a little reliable seed which we have grown, and we regularly saved the seed. We can offer limited quantities to our clients and invite applications for particulars. It is claimed for this strain of Prairie Grass that it is permanent under heavy stocking, and that it is of a most palatable nature. Over the past three years our test plots have proved distinctly superior to common Prairie Grass. The seed we offer is certified by the Tasmanian Department of Agriculture.

KIKUYU GRASS

(*Pennisetum clandestinum*)

This is a native of British East Africa, and is a perennial grass with a strong system of surface and underground runners which quickly root at the joints and then send up fresh growth. On this account it is very quickly-spreading where the winters are not too severe, and also remarkably drought-resistant.

It should succeed in almost any district where the rainfall is 20 inches or over. It is of particular value for poor sandy soils where it is usually difficult to grow anything but weeds, though naturally the richer soils will give correspondingly better results. It has proved of great value in combating bracken fern and other strong weed growth.

It does not seed in Australia, therefore, it can only be distributed by means of cuttings or rootlets, which we can supply at any time from late winter on. Plantings are usually made during the spring, summer and early autumn months. It is recommended to plough the land, opening up furrows six feet apart, and dropping in the rootlets every three feet. At this rate, about 2,500 plants will suffice for one acre. Do not plant in cultivation ground, as it is difficult to eradicate once it becomes established.

KENTUCKY BLUE GRASS

(*Poa Pratensis*)

A good winter grass for tableland districts with a good rainfall, yielding a quantity of fine feed in the autumn, winter and early spring. It dies right down in the summer, but soon springs again after rain. It has a creeping habit, resembling Couch, and if once introduced, will become a permanency in suitable districts. Use a little in mixtures.

TALL OAT GRASS

(*Avena Elatior*)

This grass is now frequently used in pasture mixtures and is proving very hardy. It appears to replace Cocksfoot in soils too poor or light for the latter. It has a deep-rooting system, which protects it against drought. It is a good winter grass and a quick grower. Stock may at first be averse to it, but when used to it eat it readily, especially if sown in mixture with other grasses. Customers are recommended to try this grass in land which is rather light in character for other artificial grasses, and we would be pleased to have reports after testing. It is best included in mixture with other grasses at the rate of from one to three pounds per acre.

WALLABY GRASSES

(*Danthonia* Species)

One of the hardiest of our native grasses. Grows in a wide variety of soils and climates. Especially adapted to the poorer soils unsuited to other grasses, splendid for sheep. Strains of *Danthonia* are usually found growing naturally in most districts where conditions are suitable. It is naturally adapted to dry districts where other introduced grasses fail.



Sheep's Burnet under test on our Trial Grounds. Graziers should investigate the possibilities of this hardy deep-rooting perennial forage plant.

SHEEP'S BURNET

This fodder plant has proved itself suitable for fairly dry country. It does best in fairly cool climates, but stands a good deal of dry weather, and remains green when every other fodder is burnt up, springing again with light showers, and is absolutely permanent when once established. It is a herb, not a grass; grows from 15 to 18 inches high, and has a long tap root, which enables it to stand dry weather and grow when other plants with shallower roots dry off. It grows both in summer and winter, giving the greatest rush of food in spring. Sow ten to twelve pounds per acre. Burnet may with advantage be included in Grass Seed Mixtures for poor soils; being a deep-rooter, it does not rob the surface-rooting grasses, and succeeds where better grasses fail.

TALL FESCUE

(*Festuca Elatior*)

A strong-growing, coarse grass, now considered to be distinctly valuable. While it may not have quite the feeding value of some of the finer grasses, it is extremely hardy, and is adaptable to the poorer classes of soils, and if kept fed down, is quite palatable. We recommend a proportion of this in all mixtures to be sown on light land. In the wet districts of New Zealand, Tall Fescue takes Ergot very badly, which causes sickness and abortion in cattle. This trouble has not occurred in the drier climate of this country, but we suggest that it should not be sown anywhere near swamps.

CHEWING FESCUE

(*Festuca Rubra* Var.)

This grass has been grown in New Zealand with success on poor light, as well as heavier lands; it has formed a good sward where no other grass would succeed. It is permanent and throws up a useful amount of feed in the early spring, particularly good for sheep. We would recommend that a little of this grass be included in all mixtures for permanent

PRICES

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pasture on hilly country. In the cold, fine-wool growing districts, of good rainfall, it should be valuable for thickening up existing pastures. Being a dwarf grower and exceptionally hardy, it is very suited to such purposes. This grass is very palatable to sheep, and will green up after rain any time of the year. There is no trouble whatever with the seed in sheep paddocks, and when once introduced in suitable country it will spread itself.

MEADOW FESCUE

(*Festuca Pratensis*)

A perennial grass suitable for districts with fairly regular rainfall and much relished by all stock. This grass has given good results under observation in many districts, and may be included in all grass mixtures for districts with good rainfall where long dry spells are unusual, especially in low-lying areas.

RHODES GRASS

(*Chloris Gayana*)

A very strong-growing grass, which, rooting at every joint, soon covers a large area. Excellent for hot climates, but succeeds well in a large range of situations and climates, except where heavy frosts are experienced. It is quick germinating after rain, but needs soft moist weather for an ideal "strike." It makes growth rapidly, and is very palatable to all stock when kept well grazed. When well established it is remarkably drought-resistant. It is very largely used for surface sowing after clearing and burning-off scrub in the coastal areas. In some of the inland districts of Queensland, Rhodes Grass is proving of the utmost value and has also been of value in some parts of the Western Slopes of N.S.W., especially in areas where summer rains predominate. When planted with Lucerne, sow four pounds of Rhodes and two or three pounds of Lucerne per acre. When sown alone, six to ten pounds per acre is sufficient, if good quality seed is used. Sow in spring; or in early autumn in very mild climates. It requires warm, moist weather to germinate successfully. In cooler districts sowing should be confined to the spring.

PASPALUM DILATATUM

(Yates' Prime "Hand Shaken")

Does well alone or in conjunction with Rhodes Grass in coastal districts after a burn. The seed should be sown during spring, summer or early autumn, say from August to April. Succeeds best where moist warm conditions prevail. Paspalum should be kept well grazed. If it is allowed to become rank it swamps out clovers and winter-growing grasses, such as Rye Grasses and Cocksfoot. These choice grasses and Perennial Red Clover and White Clover do well with Paspalum, if the grazing is rotational and well managed.



Left: Natural Pasture. Right: Improved Pasture of Phalaris

It is an excellent practice to sow a few pounds of Perennial Red Clover and White Clover with the Paspalum, as these provide feed when the latter is more or less dormant. Sow ten to twelve pounds of Paspalum per acre.

PASPALUM COMPRESSUM

(Also known as Dorrington Grass or Carpet Grass)

A dwarf-growing variety of Paspalum, proving of some value for poor sandy, ridgy stretches of country in districts of fair rainfall. Should be sown on poor land only. Sow five pounds per acre in spring. It is much inferior to Paspalum dilatatum in feeding value.

COUCH GRASS

(*Cynodon Dactylon*)

Stands heat and drought well, and is especially suited for dry and sandy spots on the coast, and other mild districts of fair rainfall, where other grasses will not flourish. It is also of great value for binding loose soil, sand banks, etc. It should not be planted near cultivation paddocks, as it is difficult to eradicate. Unless the ground is warm and moist, the germination is often unsatisfactory; therefore, sow in warm weather after good rains, using ten pounds per acre.

In warm climates this grass is very largely used for lawns, making a close, fine turf, and withstanding considerable heat and drought. For this purpose about three pounds of seed are sufficient for about 100 square yards. Sow in spring and summer.

ELEPHANT GRASS

(*Pennisetum Purpureum*)

Although not strictly speaking a pasture grass, this has proved to be a fodder plant of some value. It is a vigorous growing plant, attaining a height of 12 to 15 feet. It stands cutting well, tests made by the Department of Agriculture showing a return of 50 tons and more of green fodder per acre per year, and also that this grass is of good feeding quality and that stock relish it, but it must not be allowed to get too high and coarse. It may be also grazed, and shows a very satisfactory food value by analysis. Elephant Grass is a summer grass, and a patch should be established in rough places where other fodder crops cannot be grown. The "cuttings" should be planted three feet apart in and between the rows. Plant in spring. The grass does not seed.

GRASSES FOR SWAMPY AREAS

WATER MEADOW GRASS (*Poa Aquatica*)

This is used rather extensively on marshy land, and swamps in Gippsland, Victoria, and it is growing in favour in N.S.W. We can usually supply root stocks (seed is not available). This grass is now found to be very useful for swamps in almost any climate and where such areas cannot be drained we advise plantings. Lotus major should be sown about the edge of the swamp. It does well in association with *Poa Aquatica*.

PASPALUM DISTICHUM (Water Couch)

Most useful for salty marshes and other wet areas.

Customers should give us a week or 10 days' notice to enable us to arrange supplies of above. We can supply roots only.

AGROSTIS SPECIES

These grasses are used fairly largely for lawns, golf greens, etc., and are commonly known as Bent Grasses. Their value for pasturage is low, except in cold, harsh situations. We stock *Agrostis tenuis* (Brown Top or Rhode Island Bent), very widely used on golf greens, and all classes of lawns, best sown in autumn; *Agrostis vulgaris* (Red Top), for special purposes only.

Agrostis tenuis (N.Z. Brown Top) holds promise as a pasture grass in the cooler areas of good rainfall, especially in damp patches, where it is a remarkably quick grower in the cool weather and is perennial in nature. 1 lb. per acre in mixtures is worth trying in damp situations.

OTHER GRASSES

We also stock the following which, however, are of minor importance under Australian conditions, except for special situations or purposes:—Timothy, *Poa trivialis*, *Poa nemoralis*, Meadow Fox Tail, Crested Dog's Tail, Yorkshire Fog, Rib Grass or Lamb's Tongue (not a member of the grass family).

CLOVERS, Also TREFOILS, MEDICS, and LOTUS

(Information re Hard Seed in Clovers at foot of these columns)

CLOVERS are essential to every well-balanced pasture. They provide a "balanced ration" with the grass. Grass growing without clovers soon starves for nitrogen unless such is artificially supplied. Clovers, as do all legumes, gather nitrogen from the air. Large quantities of this plant food element are stored in the soil by colonies of bacteria working on the roots of the leguminous plants. The surrounding grasses avail themselves of this supply. Pasture grasses well mixed with clovers are dark green and rich. When clovers are absent, the colour is light green and the feeding value low and unpalatable.

All clovers, of whatever type, will stand grazing. The cultivation types, such as Berseem Clover, Crimson Clover, etc., are valuable for sowing with grazing crops such as Oats, Barley, etc., and also in temporary pastures with Italian Rye Grass, Perennial Red Clover.

Clovers must be sown in a fine, well-prepared seed bed, and covered lightly. All clovers and other legumes require fairly "sweet" land and respond instantly to phosphatic manures. We advise the use of superphosphate when sowing.

WHITE CLOVER

(*Trifolium Repens*)

This is an essential Clover in all the best permanent pastures. It stands very heavy grazing, and is suitable for all coastal and highland climates of fair average rainfall. The most perennial strain is undoubtedly the best New Zealand grown, and for those sowing with Perennial Rye Grass, Cocksfoot, etc., we recommend one or two pounds per acre of the N.Z. strains.

When sowing with Paspalum, Rhodes Grass, etc., in areas subject to dry spells, the heavier seeding but less perennial European grown strain of White Clover is sometimes used. This strain is the foundation of the quick-growing, heavy-seeding, annual types now almost natural over a large area of the North Coast and other parts. This short-lived strain seeds heavily and leaves the soil well impregnated with seeds, which shoot away with good seasonable rains. However, the N.Z. strains are more permanently rooted, and in temperate districts of good rainfall are much to be preferred, as they are always throwing leafy growth, and, even if checked with a short dry spell, shoot quickly into strong growth with the first shower.

Sow in pasture mixture in autumn mainly, or, in cool climates, when combined with Paspalum or Rhodes Grass, in spring.

YATES' SPECIAL LAWN GRASS MIXTURES

For lawns and sporting greens in all climates we make special mixtures of carefully selected varieties which will give constant all-the-year-round service.

Write for our Special Leaflet on Lawns.

SUBTERRANEAN CLOVER

(*Trifolium subterraneum*)

An annual Clover which makes its growth in the cooler weather, starting off with the first autumn rains, and has a dense spreading habit and is very free seeding. A proportion of the seeds are deposited under the soil, hence the name Subterranean. The seeds are contained in a soft case, which does not hang in the wool, and, being large, are readily licked up by the stock in the dry weather when the ground is bare, just as they do the seed of the ordinary Burr Trefoil. Subterranean Clover is a wonderful soil improver. Sown on poor, rain leached hilly country, with superphosphate, it quickly builds up the fertility of the land. In good rainfall districts Perennial Rye Grass and Cocksfoot, etc., can be introduced into the land where it would never grow before after Subterranean Clover has spread well and carried on its good work.

While originally only one strain of Subterranean Clover was generally recognised, now others of interest have been developed. The most commonly used form is the mid-season type. We call this our No. 1 Supergrade strain, and it is most useful for all temperate regions.

For use in the drier districts where complete success has not been obtained from the mid-season strain, we recommend the use of Yates' Special "Earlstrain," otherwise known as Dwalganup, W.A. Government certified. This variety seeds a full month earlier than the normal mid-season one, and is better adapted to districts where the springs come in very quickly, and where hot dry spells are experienced at this time of the year.

For those clients in cold late districts where the rainfall extends well through the spring and into summer, we are now offering a special Late Strain of Subterranean Clover in our Mammoth Late. This strain produces very large leaves if well fertilized, and it has a very long-growing period, maturing fully a month later than the normal mid-season strain. It is certainly worth a trial where the normal strain does not give quite so long a grazing period as the climate seems to warrant. Another late maturing strain of Subterranean Clover is known as Tallarook. It is a very promising sort for districts where the spring is late and the early summer cool.

The Special "Earlstrain" has advantages which are causing people to recognise its value in the cooler districts as well as the warmer ones. This advantage consists in a greater fibre content, giving a better balanced ration, and its ability to come away more quickly than other strains after being fed closely.

Many practical men now include a little of the "Earlstrain" in mixture with the normal strain when sowing down areas of Subterranean Clover, and now that we have our Late strain to offer we recommend the practice of including a little of this also in the cooler districts.

Subterranean Clover Yates' No. 1 Supergrade } See above
" " " Earlstrain } for de-
" " " Mammoth Late } scriptions.

As both Subterranean Clover and Wimmera Rye Grass are free seeding annuals, they are the easiest and probably the most satisfactory combination for the sowing of broad acres in grazing country at the present time. If they are planted after the first autumn rains and fed off only lightly for the first year, special care being given them at seeding time, a much improved permanent pasture should be assured in all districts with a good autumn and spring rainfall.

The feeding value of Subterranean Clover is very high, and all classes of stock do exceptionally well on them. Owing to the way it grows in a dense mass it is excellent for sowing in land covered with undesirable weeds or top growth, as it spreads rapidly and tends to choke them out.

On properly prepared land, Subterranean Clover should be sown at the rate of 5-8 lbs. per acre, thus giving a good growth immediately; however, it can be cheaply introduced on grass land by scattering about 2 lbs. per acre and then, if possible, scratching the surface soil with a harrow, but sowing at this rate it may take two or three years to become thickly established.

Most of the country in Australia which enjoys a regular winter rainfall is deficient in phosphates. Subterranean Clover is particularly partial to this food element, and it is essential for success to top-dress with superphosphate when sowing the seed. Established pastures containing Subterranean Clover should be top-dressed annually—or at least every second or third year—with superphosphate.

Most samples of Subterranean Clover seed contain large proportions of Hard Seeds (see below). Our special treatment, where necessary, ensures an even strike, and the high percentage of germination means economy in sowing. Yates' Subterranean Clovers, in three varieties, outstanding for quick, even germination.



Preparing the land for improved pasture on a Central Western Property.

A NOTE ABOUT HARD SEEDS IN CLOVER AND LUCERNE

DISAPPOINTING results are sometimes caused by unduly large proportions of Hard Seeds in Clover and Lucerne samples. These hard seeds are very slow in germinating. Sometimes they remain in the ground for one or two seasons before the hard covering will absorb enough moisture to start the germ. This is nature's method of ensuring continuance of the race. If many of the plants die out the first season before seeding, there will be enough hard seeds in the ground to come later. We have a method of treating these hard seeds so that where a large proportion were originally present in the sample, our clients will not suffer from slow and uneven germination. This is very important, as less per acre need be sown of our high-germinating samples.

GREEN FEED ALL THE YEAR ROUND

ENGLISH TREFOIL (Medicago Lupulina)

A perennial which does best in cold districts and deep soils. It is recommended in mixture with other pasture seeds for these localities. It provides good bottom herbage through the winter, and lasts well into the summer. It has found great favour in the northern high-lands, standing conditions there sometimes unfavourable to other pasture clovers. We believe this trefoil has great adaptability, and we recommend farmers in the warmer districts—where it has not yet been grown to any great extent—giving it a trial by including in pasture sowing mixtures.

BERSEEM (or Egyptian Clover) (Trifolium Alexandrinum)

A very valuable annual cultivation Clover suited to the more temperate districts, which must be sown in early autumn, as it makes its growth during the autumn, winter and early spring months. Sown in early autumn in a favourable locality, it will give many cuttings of valuable Lucerne-like green-stuff during the winter and early spring. Yates' Berseem Clover, locally grown, is superior to imported seed, which is so frequently mixed with Hexham Scent, a bad tainting weed prohibited in N.S.W. Sow 8-12 lbs. per acre on rich cultivated land. It must be re-sown as a crop each autumn.

BOKHARA CLOVER (or White Sweet Clover) (Melilotus Alba)

A biennial, extremely useful for renovating and green manuring. The plant makes very big root growth, and when it dies out after the second year it rots down very quickly, leaving the soil well opened up. Bokhara can be grazed by all classes of stock, the fodder value, by analysis, being extremely high. There is practically no danger of bloat with this Clover, but it is likely to taint milk. It is an excellent honey plant. If used as a rotation crop it can be ploughed in either the first or second year according to circumstances. The main seeding takes place the second year. There is little danger of the plant getting out of control. This plant should not be grown in wheat paddocks, as the seed will taint flour. Sow 8 lbs. to 10 lbs. per acre broadcast, or 5 lbs. in drills.

BURR or "NATIVE" TREFOIL (Medicago Denticulata)

This is now one of the commonest plants in the inland grazing areas of N.S.W., and furnishes a tremendous amount of feed. It grows with the first good autumn rains, giving a heavy yield of lush green fodder throughout the winter and spring. With the approach of summer the plant ripens off and the seed, falling on the ground, then forms a most valuable and highly concentrated food. This the sheep will lick up from the ground and thrive on. Country that grows this Trefoil is essentially fattening country. The burrs are a great disadvantage in purely wool-growing country.

BURRLESS or BUTTON TREFOIL (Medicago Orbicularis)

This is a variety of Trefoil Clover which has attracted attention in Tamworth and other northern districts. It is very similar in its growth and appearance to our Native Trefoil or Burr Clover, but the seed is not enclosed in a burr, but in a smooth pod like a small snail's shell. This is manifestly a great advantage to wool growers. However, the plant is not as hardy or as prolific as the well-known Burr Clover. It is an annual, but seeds itself so profusely that it comes up every spring, and is permanent when once introduced in suitable districts.



Lucerne Hay—there is no better standby against a drought.

LUCERNE

Some Notes on its Treatment as a Grazing Crop, with Special Reference to Wheat Lands on the Slopes and in the Riverina.

NO NECESSITY FOR HEAVY SOWINGS

There is no advantage in sowing Lucerne more thickly than the quality of the land warrants. In the best alluvial land 10 lbs. per acre is ample and as little as 2 lbs. per acre makes a satisfactory sowing for pasture purposes where a combination of grass and lucerne is required.

SOWING THE SEED

The seed being small, should be only lightly covered with soil (about $\frac{1}{2}$ in.); if buried more than one inch the percentage of germination is noticeably reduced. The best quality re-machined seed only should be used, and the land should be well prepared, fallowed, and after sowing, well firmed, so that the seed will make good contact with the soil.

The usual method adopted in sowing seed on large areas is to use the wheat drill or the "combine," while on small areas a hand broadcasting machine is operated or the seed is scattered by hand.

When lucerne seed is mixed with superphosphate and sown through the fertilizer box of a grain drill, care must be taken not to sow too deeply. Often it is an advantage to

pull the distributing tubes out of the "feet" of the drill, allowing the seed and fertilizer to drop on the surface of the ground. A brush harrow, such as a strip of wire netting suitably weighted, will give sufficient cover. When the soil has a loose, dry top with a firm, moist bed just underneath, it is often an advantage to sow through the "feet" of the machine just on the moist soil.

When seed and superphosphate mixed are being sown, only a small quantity of the mixture should be put in the fertilizer box at a time, as this ensures a more even distribution of the seed over the area to be planted.

On friable, self-mulching soil, lucerne is being established satisfactorily for pasture purposes by broadcasting the seed per medium of top-dressing machines, harrows following to give effective covering, or sheep may be used to lightly tramp the seed into the ground. In some cases the land is given a shallow cultivation prior to seeding.

Autumn sowing is generally to be recommended, as the plants have a chance of becoming well established in the cool seasons, but there are many factors which have to be taken into account, such as the period of greatest weed growth, severity of winter frosts, etc., and spring sowings are therefore often very successful.

CLUSTER CLOVER (Trifolium Glomeratum)

An annual something like Burr Clover, but thrives in rather lighter soils. It grows on hills where Burr Clover is often confined to the flats. It has no injurious burr and therefore is excellent for sheep country. It is easily introduced by scattering seed over the land when it is not too hard.

ALSYKE (Trifolium Hybridum)

Combines to some extent the qualities of the Red Clover and White Clover. Particularly suited to wet or cold climates. Will not stand much heat or drought. Include a little in mixtures for damp situations.

STRAWBERRY CLOVER (Trifolium Fragiferum)

An excellent variety for low, wet swampy land, subject to floods or inundations. This plant has a trailing habit, and thrives where no other Clovers and very few grasses will grow owing to excessive moisture. If one pound or so per acre is sown in suitable situations it will very soon spread. It is very largely grown in portions of Gippsland, where the land is swampy.

SUCKLING CLOVER (Trifolium minus)

Probably one of the commonest quick growing annual Trefoils. It grows close to the ground, giving good bottom feed in the early spring and is valuable for land which does not naturally grow White Clover. It seems adapted to poorer soils and slightly drier climates than would suit White Clover, and its very heavy seeding habit ensures continuance once it is introduced in suitable soils.

TRIFOLIUM CERNUUM (Drooping Flowered or Gingen Clover)

This is an annual Clover which seeds itself down, so that once introduced it is permanent. It makes heavy growth in the autumn and winter months, and is particularly suitable for moist or even wet soils in cool climates. It will withstand a large amount of inundation during the winter months. In drier soils it is not so successful.

TRIFOLIUM INCARNATUM (or Crimson Clover)

An annual clover, useful as a rotation crop or for hay. It is a very quick grower and a great soil renovator. The root system is particularly efficient in producing nitrogen bacteria and therefore should be useful as a soil improver in orchards in cool highland districts. Stock do not eat it readily when green, owing to its hairiness. A splendid variety for clover hay in cold districts. Sow 10 or 12 lbs. per acre in autumn.

LOTUS (Varieties)

LOTUS CORNICULATUS (Birdfoot Trefoil).—A perennial which will probably do well in coastal and tableland districts, where rainfall is mainly a summer one. We have recently tested this variety out in the County of Cumberland and we find it to be a drought-resistant hardy pasture plant; perennial in habit, with its main growing period in the summer time.

(A customer in North Queensland, where Clovers are hard to grow, reports great success with this Lotus.)

LOTUS MAJOR (Greater Birdfoot Trefoil).—A perennial like the above, but appears to do best in damp soils, and grows mainly in the cooler months. Used largely in N.Z. for breaking-in newly-drained swamps.

LOTUS ANGUSTISSIMUS (Narrow-leaved Lotus).—A hardy annual clover which does well in rough country and should be very suitable for including in sowings on burns in the autumn in cool country.

TOWNSVILLE WILD LUCERNE (Stylosanthes mucronata)

In the far north of Queensland this pasture plant has recently attracted notice. It comes away with summer rains and provides a leguminous feed so generally lacking in pastures mainly supported by summer rainfall. We understand it ripens off and seeds as the rainless winter months advance, quickly spreading in suitable climates when once introduced. We are able to offer limited quantities of freshly saved seed.

LESPEDEZAS

We usually stock small quantities of both varieties as mentioned below. They may have a value in this country for soils which do not seem adapted to Lucerne or the Clovers. It is a summer grower and where other legumes will not do it may be useful as a fodder and soil renovator.

LESPEDEZA STRIATA (Korean Clover).—A quick-growing annual form. The growth is soft and palatable.

LESPEDEZA SERICEA.—This is a perennial form recently come into great favour in the United States, where it is said it will grow vigorously on land that will not suit Lucerne or other Clovers. It is not an attractive fodder plant, being very hard and "sticky."

FEEDING-OFF LUCERNE STANDS

Tests have shown that lucerne should be allowed to reach full bloom before cutting or feeding-off at least once or twice a year. Where sheep are continuously grazing on a paddock of lucerne for lengthy periods, the young shoots are severely eaten back, the crowns become damaged, and the vitality of the plant is considerably impaired. In paddocks that are grazed the surface soil sets hard with tramping and cultivation should be carried out at least twice a year.

It is advisable to have reasonably small paddocks, and put large numbers of sheep on at a time to eat the area off in at least ten or twelve days. If the paddocks are large, temporary fences that can be erected rapidly and moved easily should be utilised for sub-division purposes.

Top-dressings of 1-1½ cwt. superphosphate per acre should be made at least every second year. The fertiliser should be applied in July or August, working it in with a cultivator or heavy tripod grass harrow.

The carrying capacity of well-managed grazing areas of Lucerne is remarkable. By the judicious use of light sowings of Wimmera Rye Grass with the Lucerne, heavy winter and summer grazing is available.

CEREALS OR WIMMERA RYE GRASS FOR WINTER FEED ON THIN LUCERNE STANDS

Where lucerne stands have been utilised for grazing for a number of years and are thinning out, an autumn sowing of 20 lbs. of wheat or 30 lbs. oats per acre, on easily worked land, will provide a considerable quantity of winter grazing during the cereal crop's period of growth of five or six months, or an over-sowing of 3 to 5 lbs. of Wimmera Rye Grass seed per acre may be made in the autumn. Great success has been gained by sowing from one to two pounds

LEGUMINOUS CROPS—Autumn Planting

In the agriculture of the world the Legume family rank next in importance probably to the Grass family. For providing a fodder of the highest nutritive quality, for renovating worn-out land, and for keeping valuable farming land in proper condition, nothing is more useful than the various species of Legumes which are now in commercial use. Note remarks in introduction to clovers.

FIELD PEAS

Field Peas are a very easily grown crop on fair class cultivation soils in temperate climates—loams and clay loams of an open nature are best. They are best sown in the autumn or early spring.



An exhibit of Grasses, Clovers and Fodders. Yates are always pleased to give advice and specifications for particular purposes and conditions. Write us, setting out your problems and the nature of soil, climatic conditions, etc.

Peas are very quick growers, and give a good bulk for fodder or for green manuring. When grown for fodder they are best used in conjunction with a cereal, such as wheat, oats, or barley—say 1½ bus. of the cereal to ½ bus. of Field Peas. Stock do sometimes avoid Peas when they are green until they get used to them, but they always eat them readily when well wilted or made into hay.

Field Peas are very largely grown for green manuring, and may be sown in drills or broadcasted at from 1½ bus. to 2 bus. per acre. If they are sown early they make wonderful growth throughout the winter, and may be ploughed under in the spring, just as the pods are setting. Frost in the winter will kill the flower and pods but will not prevent the vines growing.

Peas are among the best of the soil improvers, even if the roots only are ploughed under the soil is greatly enriched. A favourite method of growing Field Peas for fodder and soil enriching on coastal farms is to sow the Field Peas between the rows of late maize just prior to the last cultivation. When the maize ripens the drying leaves allow ingress of light and air, and rapid growth is made. After feeding off, the roots and top growth which has been trodden down are ploughed, and help to maintain the soil fertility for the following maize crop.

Field Peas, though not so hardy as Tares or Vetches, are earlier maturing, usually cheaper in price, and one grower reports that when grown with a cereal it will stand the tramping of grazing cattle better than will Golden Tares under similar conditions. Field Peas can be sown in the autumn or spring, but in mild districts we prefer autumn sowing.

Sown alone 1½ to 2 bushels per acre broadcast, or say 1 bushel in drills 2 feet apart. Sown with cereal crop, try ½ bushel Field Peas with 1½ bushels oats or wheat per acre.

Care should be taken to sow the seed deeply enough (2-3 inches in normal soils). Superphosphate should be applied to ensure heavy yields.

Grey or Partridge Field Peas.—This produces probably the heaviest amount of green stuff of all the Field Peas, and is exceptionally hardy. For green manuring or for fodder purposes in most districts, it is the variety to use.

Yates' New Handbook

For every man who wants to get the best out of his land and livestock

GRASSLAND AND GREENCROP FARMING

Pasture Improvement
Rotational Grazing
Fodder Crop Growing

1/-
POST FREE

The above subjects are dealt with in a simple and yet comprehensive manner. A very wide range of useful grasses, clovers, and fodder crops are catalogued and described.

Methods of planting and cultivation are discussed. Help is given in the choice of suitable varieties for varying soils and climates.

of Lucerne seed (taking care not to sow too deeply) with a crop of Wheat or Oats. It would be wise when doing this to reduce the amount of seed of Oats or Wheat below the usual to allow the Lucerne stands to have a better chance. This practice is most successful in districts where late spring or early summer rains may be experienced.

LUCERNE IN GRASS MIXTURES

A little lucerne is worth including in all pasture mixtures for sowing on reasonably deep and fertile soils, whether hill or dale. The deep roots of this legume ensure green feed in summer, when most of the grasses will be dormant.

Lucerne and Wimmera Rye Grass make a splendid mixture to provide all-the-year-round grazing in dry hot climates, provided sufficient autumn and winter rains fall to start the Wimmera early and ensure growth throughout the winter and spring.

Seed Supply.—For over thirty years we have been handling lucerne seed in large quantities, and it follows naturally that we have gained a wealth of experience.

In sealed bags, is re-machined and tested seed of extra prime quality of a superior type of N.S.W. grown lucerne, which is saved

YATES' BROADCAST LUCERNE

on selected farms in those districts in which, owing to special natural conditions there has been evolved a long-standing drought-resisting strain, which has proved itself for Australian conditions. We specially treat samples of lucerne seed containing "hard seeds," thus ensuring a very high percentage quick germination, which is important, helping the newly sown crop to overcome the weeds which so quickly come in a newly sown area. Supplied in 25 lbs. and 50 lbs. net SEALED bags.

TARES or VETCHES

Used for winter green feed and spring hay in combination with Oats or Rye Corn. They are much harder than Field Peas as regards severe winters and poor soils, but do not make so much bulk. The Golden Tare is the variety which has been mostly used. The Purple Vetch (*Vicia atropurpurea*) has been coming well into favour in recent years. This variety is really outstanding. It may be grazed or cut again and again with the other winter green feed with which it is sown, and recovers well. Of a trailing habit and vigorous growth, quite a light seeding of this Vetch will give good results. The seeds are much smaller than the Golden Tare, and will therefore sow more land weight for weight. A most valuable sort for green manuring.

Vetches are wonderful soil improvers. We strongly recommend a trial of the Purple Vetches for providing well balanced green fodder with Oats, Rye Corn, Barley, etc., etc., or for green manuring. Sown alone use about 30 lbs. per acre or about 15 lbs. with 1½ bushels to 2 bushels per acre of other grain. Superphosphate should always be added if there is any lack of fertility in the land. If using the Golden Tare about 30 lbs. with a bushel of grain or up to 2 bushels sown alone, should suffice.

NEW ZEALAND BLUE LUPINS

Annuals which for green manuring provide one of the best crops for ploughing in, especially in our cooler districts. They are not suitable for green-feed for animals, and under certain circumstances are liable to be poisonous. When practicable we recommend autumn sowing, but they will succeed if sown in early spring. Lupins grow very rapidly and produce a quantity of top. Sow at the rate of 2 bushels per acre. For small trials 3 lbs. will sow an area of 100 square yards (10 yds. x 10 yds.). Supplies are scarce.

WEST AUSTRALIAN BLUE LUPINS

Reports of the value of these Lupins in W.A. have caused an enquiry for them in N.S.W. This is due to a misunderstanding of their limited use. In W.A. they are only used on poor sandy country with a 14-15 inch rainfall, and which only grows rough scrubby feed. It is not considered that they would be of any use in N.S.W., as where grass will grow it is much better.

KUDZU VINE

(Pueraria Thunbergiana)

A perennial legume only adapted for poor soils near the sub-tropical coast. We can only supply in packets; but as the plants grow quickly and send out long runners which root at every joint they can then be severed and transplanted over the required area. Packets, 1/-.

HORSE or TICK BEANS

A variety of Broad Bean, the seeds of which form excellent feed for horses, but their main usefulness is as a winter green-manuring crop. Sow about 2 bushels per acre if broadcasting, or say one bushel in drills. Our lines are all heavily machine dressed and tested, and less need be sown per acre compared to inferior samples.

SUMMER GROWING LEGUMES

Such as Cow Peas, Soy Beans, Velvet Beans, etc., are listed in our Spring Farm List, available later.



A Seed Crop of the New Vetch (Vicia) on our Tasmanian Seed Farm.



Stud Sheep in Lucerne—The King of Fodder Crops.

STRONGER CROPS; YATES' RE-MACHINED AND TESTED SEEDS

YATES' RE-MACHINED SEED GRAIN

LESS NEED BE SOWN WHEN YATES' MACHINE-DRESSED SEEDS ARE USED

FARMERS recognise the importance of the primest and purest samples of grain when sowing for hay, grain or green fodder. For the sake of a few pence per bushel, it is not worth the risk of infesting the land with weed seeds. The stout plump graded seed nourishes the seedling until it can develop its root sufficiently and establish itself in the soil. Seedlings that come away without check must produce a more vigorous crop than those that are partly starved in the early stages.

The sowing of Re-cleaned Farm Seeds means **CLEANER CROPS, Surer CROPS, HEAVIER CROPS**, and what is perhaps of the most importance—**CLEAN LAND**.



Sunrise Oats—a prolific grower.

Florence Wheat under Test.

A Stud Plot for Seed Sunrise Oats.

SEED OATS

Prime Heavy Re-cleaned Samples.

The importance of sowing only re-cleaned and re-graded Seed Oats for green fodder as well as for grain is now beyond the experimental stage. The high cost of cultivating the land makes it more than ever necessary to get the most out of the area sown. It is better to have ten acres of a really good crop than twice the area giving only an indifferent yield.

Oats are grown largely for feeding dairy cows. To get the best results when grazing oats the land should be divided into three or four small paddocks; the crop which has been trodden down soon recovers after a few weeks' spell, but continual grazing is wasteful, not good for the crop or the cows. We recommend that a dressing of one cwt. or more of superphosphate be used, also that a proportion of Field Peas, Vetches, or Red Clover, according to climate and situation, be planted with the Oats. This will give a balanced ration, and so increase the milk flow; it will also help to maintain the fertility of the land, and when Perennial Red Clover is used, will give a good stubble feeding during the following autumn.

The Algerian variety is of finer leafage, stands up to trampling, and is of strong root growth, which prevents it from being easily pulled out. It stands the greatest amount of feeding off, but if the earlier varieties, such as Sunrise, Buddha, Mulga and others, are sown to provide a rotation with the Algerians, good green feed will be had much earlier. On account of their quick-growing capacity, these varieties are also very useful for planting late in the season. Yates' Extra Prime A.Y. Re-machined Samples are the very pick of the lines offering, thoroughly re-cleaned and graded by our special machinery. Every grain should produce a strong, well-nourished plant under proper conditions, and less seed need be sown per acre.

LIST OF VARIETIES.

- Algerian.**—See foregoing, the variety most used for all-round purposes, stools well, is very hardy, and a great drought-resister. A wonderful grazing oat.
- Sunrise.**—An early oat of medium coarse straw, very suitable for coastal districts; moderate stooler. It should be sown more thickly than Algerian. An excellent oat for silage or green fodder, giving a great bulk of feed; it is not so good for hay as Mulga, as the stems are not so fine. Stands feeding off well, and is much less liable to rust than Algerian.
- Mulga.**—A very early maturing selection from Sunrise. It also does well on the coast and tablelands. It stands feeding-off well, and can be sown either early or late. An excellent oat for grain, and produces a fine plump sample in warm districts where Algerian will not do well.
- Buddah.**—An early rust-resisting sort, but supplies have in the past been difficult to obtain. Coming greatly into favour.
- Belar.**—An excellent grain oat of the Algerian type. More suitable for the warmer and earlier districts. A good grazing oat.
- White Tartarian (Side Bearing—Late).**—One of the earliest white-grained varieties, and good for green fodder, especially on the cold highlands, where it is much in favour for spring sowing.
- Heavy White.**—A green fodder oat for moist cool climates. Gidgee—Somewhat like the variety known as Guyra—supplies of which are scarce—used mainly for late sowing in cool climates.
- Fulghum.**—Another cool climate oat not so favoured as the Guyra type on the northern highlands but is liked as a

YATES' CURRENT PRICE LIST

A very complete index of all varieties of Pasture Grasses, Clovers, Fodder Crops and Vegetable seeds in Bulk. Prices given are current until next issue, but are subject to sales and supplies. Issues of this Price List are made at intervals of from three to five weeks. Always write for the latest price list when contemplating purchasing. Available free on request.



Green Oats for winter cow feed grown from Yates' A.Y. Extra Prime Algerian Seed Oats.

grazing oat in the south, where, in cool districts, it has given excellent regular grazing. Not a good grain oat and is not rust resistant.

Ideal (previously known as Waikara).—Developed in western districts, this Oat is claiming attention owing to its extreme hardiness in combating wild oats and other weeds in dirty wheat lands. It has proved to be a wonderful grazing oat and after giving a plentiful yield to grazing sheep and lambs and other stock under hard, dry and cold winter conditions, can be shut up late for a good yield of hay and grain. It also tends to come away freely the following year as a self-sown crop if lightly cultivated. Ideal oats must be secured from a reliable source, as the grain is rather like Sunrise, which, of course, is not so suitable for such dry conditions.

RYE CORN

Rye Corn is very hardy and most suitable for poor soils, and is largely used for winter feed, especially where the climate is severe, as it grows better in very cold weather than any other cereal. It is excellent for grazing. Stock do best while the Rye Corn is young.

It will stand grazing all the winter, and rapidly grows again after being eaten down. It is also used for mixing with Tares, the Rye Corn serving to hold the Tares off the ground. Rye Corn comes into use very early. Does well on sour land even in warm climates. It is also sown to advantage mixed with Rape. The straw is very valuable for thatching, and some farmers sow the headlands of their hay paddocks with Rye Corn for thatching the stacks. Sow about two bushels to the acre.

Black Winter Rye.—The best sort for early winter feed, strongly recommended for all grazing and stock-feeding purposes.

Mammoth White.—Mainly used for thatching and for horse collar stuffing.

WHEAT

Prime, Heavily Re-cleaned Samples. For Green Feed Growing.

Wheat is largely used for green fodder and for hay, as well as being the world's most important grain crop. It stands dry conditions better than almost any other grain, and is therefore of great value for fodder and for hay. It will often give good crops in seasons when oats are a failure. The only variety we stock in quantity is **Florence**, which is of outstanding suitability for growing in coastal districts for green feed and hay. **Florence** wheat is unique for special purposes and supplies are not plentiful.

Sow up to 2 bushels per acre, together with a dressing of 56 lbs. to 112 lbs. superphosphate per acre, according to location and quality of the land. The addition of a few pounds of Field Peas or Vetches is an advantage.

BARLEYS

Barley is the earliest of the grain crops to mature, and in this earliness lies also its great value as a green fodder crop. It is one of the sweetest fodders grown, and is relished by all classes of stock. Sow about two bushels per acre.

White Skinless.—The earliest variety, and very valuable for its quick growth. It affords two cuttings, and should be grazed after each; the close feeding seems to cause it to come away with renewed vigour.

Cape.—This is the variety most generally used for green fodder. It grows quickly, stools very well, and gives large bulk of feed; a five-row bearded type.

English.—Mostly used for grain for malting.

A FEW BRIEF HINTS FOR AUTUMN SOWING

Lay down Permanent Pastures. Use the best strains and cleanest seeds available. It is our job to supply you with these, and we will advise you.

Sow Temporary Pastures.—To rest old cultivation paddocks there is no better mixture than Italian Rye Grass and Perennial Red and Berseem Clover. After a few seasons of very heavy grazings the land may be brought back to cultivation greatly improved, and the grass and clover will not persist to the detriment of subsequent crops.

Sow grain crops for winter cutting and grazing. A few Vetches or Field Peas or a little Perennial Red or Berseem Clover—according to the type of land—will help balance the ration and improve the soil.

Sow Green Manure Crops to plough under. Legumes are best, but a little grain—variety chosen for climate and land—is good used with the legumes, which may be Vetches, Field Peas, New Zealand Blue Lupins or Tick Beans, according to conditions.

Always use a fertilizer when sowing any crop. Superphosphate is cheap and satisfactory for general use. For special purposes other manures and special mixtures are suitable. Write us for advice.

SUNDRY FODDER CROPS

FOR AUTUMN PLANTING

CABBAGE, CATTLE.—In cool climates the very large late varieties have a value as cattle feed. Sow in late summer and autumn in seed bed, and afterwards transplant. Sow about half-pound for each acre to be planted out.

CHOU MOELLIER or MARROW KALE.—Variety of Kale. Of extremely vigorous growth and yields enormously. The leaves should be cut, not pulled off the stem, and fresh growths are then formed immediately. Sow in early autumn, two pounds to the acre, if drilled, or one pound is sufficient if transplanted; the drills should be two feet apart, allowing twelve to fourteen inches between the plants. Trial packets, 6d.

THOUSAND-HEADED KALE.—Few plants will give so great a quantity of feed per acre as Thousand-Headed Kale, and all animals eat it greedily. These should all be sown in a seed bed, and afterwards transplanted two and a half feet between the plants and three feet between the rows. For the best results sow in summer or early autumn. Trial packets, 6d.

CANARY SEED.—Large grown for bird seed. It may also be used for hay purposes, requires similar culture to wheat; sow 17 to 20 lbs. per acre. We stock Australian-grown seed, and extra large Morocco-grown seed. Sow in autumn.

CHICORY.—Valuable for its deep-rooting action and withstanding droughts. Usually sown in mixtures for second-class land. Sow in autumn.

LINSEED (N.Z. grown).—This is grown either for seed, for oil purposes, or for the fibre for linen making, but requires special conditions. It prefers cool country where oats and potatoes do well.

MUSTARD.—For a quick green fodder and corrective for fattening lambs, Mustard can be recommended. It is usually used mixed with Rape. It is ready a few weeks after sowing, and is often used as a quick green cover crop.

SWEDE TURNIPS

Swedes can be grown cheaply and with comparative ease on much of the upland country of N.S.W., not only for stock, but for the vegetable market. For sheep they make an excellent fodder, especially as they become available during the winter and early spring when most needed. Sowing should be made in February, March and April at the rate of approximately one pound per acre in drills about two feet six inches apart. Thin out when the plants are large enough and cultivate. Great success has also attended broadcast sowings of this crop at the rate of about 1 to 3 lbs. per acre, mixed with sand or fertiliser, to ensure even sowing. The best roots may be pulled for market and the balance grazed with sheep or cattle. This is the cheapest method of growing Swedes, as there is no thinning out or weeding to do. A bag of superphosphate per acre will cause considerable increase in weight and vigour of crop. **Yates' Champion Purple Top.**—A standard globe-shaped variety, which gives wonderful returns and is the standard sort for growing for market. Our strains are unexcelled, the crop comes in evenly and the Swedes are well shaped, large, and keep well. Also excellent for stock feed.

Yates' Monarch.—A large tankard-shaped variety with purple top. Heavy yielding and good keeper. Excellent for stock or market growing.

FIELD TURNIPS.—Valuable for providing stock feed in the winter and early spring months. They are quick growers, especially the white-fleshed sorts. They can be planted when it is too late to sow Swedes, and will yield heavy crops. Sow



A Heavy Crop of Swedes.

about one pound per acre in drills, or broadcast as suggested for Swedes. We stock the leading varieties, both white and yellow fleshed.

MANGOLDS AND SUGAR BEET.—Wonderful milk producers, and yield immense crops. In cool climates an autumn sowing will give a fine winter crop. Plant in well-worked, clean land, in drills thirty inches apart, to allow horse cultivator to work, and when up hoe to remove any growth of weeds, and, if necessary, thin out to allow the roots to develop. Five pounds per acre of Mangolds and about eight pounds of Sugar Beet are fair sowings. The best varieties are:—

Yates' Mammoth Long Red.
Yates' Champion Yellow Globe.
Sugar Beet Wanzleben.
Giant Half-Sugar Mangold.

SALT BUSH.—In the drier climates the Salt Bushes make excellent feed. They give good feeding during the summer months. The creeping variety (Semibaccata) is coming into some prominence for sowing with Phalaris tuberosa in districts of good winter rainfall but very dry summers. Bladder Salt Bush (Vesicaria) is also valuable for pastures. Old Man Saltbush, if sown in selected areas, makes a good drought reserve. They are easily raised from seed or cuttings. One pound should seed an acre. The seed appears to sprout best when sown in winter while the ground is cool and moist.

KURRAJONG (Sterculia Diversifolia).—Many stock owners have to fall back on edible scrub for the stock during drought, and the foliage of this tree has considerable value, as well as being very ornamental and enhancing the value of property.

TAGOSASTE (So-called Tree Lucerne).—Suitable for hedges or breakwind and a stand-by against droughts.

MEDICAGO ARBOREA (the real Tree Lucerne).—A yellow-flowered ornamental shrub with dense soft foliage, closely resembling lucerne. Grows 6-8 feet high, and is useful for fodder.

SOWING RAPE

YATES' "A.Y." BROAD-LEAVED DWARF ESSEX.

Sowing Rape is one of the most profitable stock fodders for fattening. In addition, it is a very useful rotation crop and soil renovator on account of its vigorous deep rooting habit, which penetrates subsoils to a considerable depth. It is one of the best annual fodder plants for sheep in the better rainfall parts of Australia, and with the widespread recognition of the value of combining sheep and wheat, it is now becoming very important on the wheat farm, not only for sheep feed, but also as a rotation crop for renovating wheat land. The roots of the Rape tend to break up and enliven the soil just below plough depth, and this greatly renovates the paddock. Rape is equally good for sheep, pigs or cattle, so long as it is not given in quantity to milking cows, as it is apt to taint the milk.

Sheep put on to Rape fatten very quickly; even old, broken-mouthed ewes that would starve on an ordinary pasture, very soon put on flesh, and are fit for the butcher. They should, however, be sent to market as soon as they are "topped off," as, if put back on the grass they very soon lose condition again. As a means of fattening lambs, especially weaners, for market, there is nothing to equal Rape.

Rape should be eaten off heavily and "spelled"; the plants then soon recover and give a second or third crop almost as good as the first; in fact, if sown in the early autumn it should give several months' feed.

Poultry farmers are finding a small patch of Rape a valuable asset, and for this purpose small successional sowings should be made through the autumn and again in the spring.

Some growers prefer to sow it with Rye Corn, say, half-bushel of Rye and two pounds of Rape; others sow it with mustard, using half-a-pound with four pounds of Rape per acre. The inclusion of mustard corrects the occasional tendency of Rape to scour. Italian Rye Grass, about 6 lbs. per acre, does exceptionally well with Rape.

We recommend sowing in February, March, or April, after the good autumn rains, but as early as possible after the middle of February. It can also be sown with ad-



Pigs fattening on Rape.

SUMMER-GROWING FODDER CROPS are listed and described in our Spring List, available later. We regularly list Maizes and Sorghums in a wide range, and also Sudan Grass, Millet, Tef Grass, etc.

A Profitable Side Line!

MARKET GARDEN CROPS

In districts within reasonable distance of the centres of population and with a fair average rainfall, it is often well worth while for the farmer to reserve some of his best land for vegetable production for market.

The essentials for successful market gardening are good soil, good rainfall or facilities for irrigation, rotation of crops, intelligent use of fertilisers, and regular cultivation, and the use of the most suitable strains for local conditions.

Few autumn-sown crops average out as well as Cauliflower, Cabbage, Pea, Bean, Swede, etc., if grown under suitable conditions, while for summer growing we have special strains of Beans, and also Melons, Pumpkins and all such vine crops. It is wise first to decide what crops are best suited for your conditions, and then to grow them consistently on a well-planned rotation. In this way you will obtain better returns than the grower who is constantly changing over and thereby often meeting a "glut" of the particular line he is growing.

For best varieties, time to plant, and for cultural directions, farmers should be guided by local experience and the information given in Yates' Annual and Yates' Garden Guide (1/- post free). Prices are set out in the Current Price List herewith.

— PRICES —

Prices are as set out in our Current List and are subject to sales and prompt reply. The Price List now current is sent you herewith and later issues will be posted promptly on receipt of enquiry. They are issued about every three to five weeks.

ARTHUR YATES & CO. LTD.

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